TYPHUS FEVER IN GREAT BRITAIN.

BY

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ILLUSTRATIONS

OF

TYPHUS FEVER IN GREAT BRITAIN,

THE RESULT OF

PERSONAL OBSERVATIONS MADE IN THE SUMMER OF 1853,

WITH SOME REMARKS AS TO ITS

Origin, Habits, Symptoms, and Pathology;

TO WHICH IS APPENDED

A BRIEF ACCOUNT OF THE RE-APPEARANCE OF TYPHUS IN BOSTON IN THE WINTER OF 1857-58.

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TO

W. H. O. SANKEY, M.D.,

Formerly Resident Medical Officer of the London Fever Hospital,

NOW

MEDICAL SUPERINTENDENT OF THE COUNTY INSANE ASYLUM,

Hanwell, Middlesex,

THESE PAGES ARE GRATEFULLY INSCRIBED

BY HIS OBLIGED FRIEND,

THE AUTHOR.

ILLUSTRATIONS OF TYPHUS FEVER IN GREAT BRITAIN,

DRAWN FROM ORIGINAL OBSERVATIONS.

WITH AN APPENDIX.

Some ten years ago were published in this Journal the results of my observations and experience in maculated typhus or ship fever, during its prevalence as an epidemic at the South Boston and Deer Island Hospitals. These records were at first given in the form of "*Clinical Notes and Post-mortem Illustrations*," much condensed and without comment.

Subsequently they were enlarged and extended, and, as opportunity permitted, multiplied, till they embraced examples of the fever in all its different degrees of intensity, and with the varying phases, complications and sequelæ manifested in the epidemic in question—accompanied by such views of its nature, pathology and treatment, as had been gained by study and experience at the bedside and in the dead-house. In such form these isolated papers were brought together and re-printed, for their better preservation and more convenient reference; since, imperfect and incomplete as they were, they embodied in desultory shape a history of the epidemic, drawn from actual inspection throughout nearly the whole period of its visitation upon our shores in the years 1847–48.

In the summer of 1853, I had the privilege of further prosecuting my researches in this direction in Dublin, and during a few weeks of daily attendance in the wards of the London Fever Hospital. At this latter institution, in particular, by the kindness of Dr. Sankey,* the then resident medical officer of the Hospital, my opportunities for the examination of disease, upon the living and dead, were of the most ample and liberal nature. My main object

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* Dr. W. H. O. Sankey, now Medical Superintendent of the County Insane Asylum, Hanwell, Middlesex, to whom I am largely indebted also for most important assistance through all the stages of these researches.

in these investigations abroad, was to compare the disease, as found in its *indigenous haunts*, with its manifestations and habits here *as an exotic*. I therefore entered the hospital, for a brief period, as a student of fever, carefully noting what I *saw* of the disease, in as many cases as it was possible to follow up, and learning incidentally, by the best means in my power, the previous history, condition and circumstances of each patient.*

The mass of materials thus collected have remained untouched till now. But the recent and somewhat sudden appearance of the fever in the wards of the Massachusetts General Hospital, hints that some local interest may again, perhaps, attach to this subject.

It is not my purpose to give an extended memoir of the fever, nor to say much upon the question of treatment; and to analyze and classify the facts collected would require more space than I feel justified to occupy here. I intend only to *portray* the disease as I found it; and as it may at all times be found in the wards and dead-house of a fever hospital in Great Britain. The subjoined cases may be regarded as *models* of the affection, in its various forms of severity. They were treated by the physicians of the Hospital, Drs. Tweedie and Smith.

In noting these cases, I have here, as elsewhere, endeavored to follow the maxim of Sydenham, so aptly quoted by Jenner, to "note them accurately, in all their minuteness;—in imitation of the industry of those painters who represent, in their portraits, the smallest moles and the faintest spots." I make no apology, then, for what might be called their tedious minuteness and particularity.

Case I.—*General Abstract of the Case.* A boy, aged 15 years, being in ill-conditioned quarters, in immediate proximity to a case of the fever, experienced sudden debility, headache, anorexia—rigors—confusion of intellect—sleeplessness—rash on the sixth day—suffused eyes—tongue coated with yellowish fur, inclining to brown—chest resonant—respiration 32 to 40—bowels mostly regular, some fulness and tenderness—surface hot, dry, pungent—

* It was here that Dr. Wm. Jenner had, a short time previously, carried on and perfected his elaborate investigations of fever, from which resulted his well-known classification, into four distinct and separate diseases, of the affection so long confounded under the term continued fever by some of the most eminent authorities of Great Britain. I had been led to the same conclusions, so far as relates to the non-identity of typhus and typhoid, by the evidence forced upon my senses in the epidemic of 1847–48, when the two diseases not infrequently lay side by side in the wards of the same hospital, and whose phenomena were noted, *pari passu*, at the bedside and in the dead-house.

pulse 90 to 124—disappearance of spots on fourteenth day, followed by convalescence, retarded by slight complications; recovery.

James Mannard, a well-made, robust lad, of sanguine temperament, 15 years of age, was admitted to the London Fever Hospital on the first day of June, 1853, in charge of Dr. Southwood Smith.

Previous History and Circumstances.—This patient is by trade a shoemaker, and has worked with his father. Prior to this attack, he is said to have been in the enjoyment of uniformly good health. He was brought to the hospital from a house in Litchfield St., and is one of a family of six persons occupying two rooms. There are eight families in the same house, limited most of them to a single room each. One other individual is down with the fever. There is bad drainage, and want of light and sufficient ventilation.

Present Attack.—On Friday, the 27th of May, he was seized, it is stated, with violent pains in the head, back, joints and bones, accompanied by alternations of heat and cold with shiverings. There was, from the outset, much exhaustion, anorexia, thirst, sensitiveness of surface, with perversion of intellect and tendency to delirium. He slept but little. His bowels had been once moved by some aperient medicine. On Tuesday, the 31st, spots were first observed on the arms and legs, "like a faint measly rash." A light diet and simple drinks only had been allowed, previous to his admission to the wards.

He first came under my observation on the third day of June, when the following notes were taken.

General appearance indicates a moderately severe accession of the disease; much pain in the head; face flushed and fuliginous; eyes suffused, pupils dilated; tongue mostly covered with a thick coat of yellowish-white fur, the edges being clean and red; chest resonant on percussion; respiration 36, easy and regular; some little cough; slight mucous râle anteriorly and superiorly; abdomen natural, no pain on pressure; stools natural; pulse 120, full and compressible; much heat of general surface; skin dry, dusky in hue. The eruption is abundant over the whole body, and of a deep red color, partly disappears under pressure, most evident on the upper extremities, where it simulates, in its disposition and clustered crescentic form, the rash of measles. A strong, peculiar pungent odor is perceptible from the surface of the body. Patient appears considerably prostrated; lies mostly only on his

back; is confused in mind; answers questions with difficulty; has no appetite; thirst urgent. He has got, since his entrance, the mild "fever mixture" of the Hospital, consisting of liq. ammon. acet., ʒ ij.; mist. camph., aq. distill., āā ʒ ss. Also, has had four ounces of sherry wine; beef-tea p. r. n.; and, for drink, milk and water as often as desired.

June 4th.—Rested pretty well, but talked and moaned in his sleep; still some pain in head; eyes suffused; face less flushed; tongue as yesterday; intelligence better; respiration 36, natural; resonance of chest good; some cough; slight bronchial mucous râle; bowels sensitive to pressure; two stools, natural; urine high colored; pulse 120, weak, compressible, regular; general surface of skin hot and dry; spots more persistent; the mottled crescentic appearance noted yesterday on the upper extremities disappearing; no appetite; urgent thirst. To continue the mild fever mixture, with wine and beef-tea p. r. n.

5th.—Passed a rather uncomfortable night; moans in sleep; decubitus on back; face flushed; eyes suffused; pupils natural; tongue has creamy coat, extending quite to its edges and tip; no sordes on teeth or lips; respiration 36, rather laborious; some cough, no expectoration; belly natural; three stools, light; urine free; pulse 124, regular; surface hot and dry, with much sensitiveness, emits a peculiar ammoniacal odor; spots equally diffused, fading, and mostly disappear on pressure.

6th.—Slept well, but moans a little at night; general powers better, more cheerful; face less flushed; eyes less suffused; tongue covered with creamy coat, drier than yesterday; no sordes on teeth, a very little on lips; respiration 40, accompanied with some sighing; coughs a little, no expectoration; resonance good; abdomen natural, a little sensitive to pressure; three stools, rather light, loose, thin; urine rather high colored; some sensitiveness of surface on chest and abdomen; spots fading, some are persistent, others disappear entirely under the finger; pulse 116, regular, full, of good volume, though compressible; no appetite; much thirst. Beef-tea, with a little bread; in other respects diet and treatment as heretofore.

7th.—Has passed a restless night; slept but little, talked and raved at intervals; complains of pain in head; eyes more suffused; tongue almost entirely clean; coughs but little, is of no consequence; abdomen pretty natural to the feel, though sensitive to

pressure; two stools in bed; urine in bed; pulse 120, regular, quite compressible; skin sensitive, more hot and dry; spots scarcely noticeable; general appearance of weakness; some nervous agitation. Treatment the same.

8th.—Slept better; appears brighter; eyes clearer; cheeks still flushed, but face more natural; tongue has a uniform covering of thin light fur, extending over the whole organ; pulse 108, soft, compressible; spots wholly vanished, with the exception of a few about the epigastrium and on the abdomen, which fade, but do not altogether disappear, on pressure; some tympanitis; peculiar odor still perceptible, but fainter; urine less high colored, some still passed in bed; thirst remains rather urgent.

9th.—Slept well, very little of the moaning during the night; is this morning lying on his side for the first time, and is able to turn from side to side alone; has just waked from a quiet sleep—says he "feels hot in his head," and "has a heavy pain," which he refers to the top and back of the head; eyes still a little injected; tongue perfectly clean; respiration 32, easy, a little interrupted; resonance of chest good; slight cough, but is not troublesome; bowels once opened, stool moderate; still some tympanitis; urine plenty and free, some passed in bed; pulse 102, stronger, has a little hardness under the finger; skin is moist and natural; less thirst; appetite returning; is taking the mild fever mixture, with wine and beef tea, milk and water and a little bread.

10th.—Slept soundly and well; face bright and natural; eyes clearer; tongue clean, excepting a very light fur thinly spread over its surface; respiration natural; belly a little tender; two stools, natural; water amber colored and deposits a slight sediment; skin is cool and moist; pulse 92, of good volume, natural.

The fever in this patient was now at an end, and his convalescence seemed fully established. His recovery, however, was retarded by some slight cerebral and nervous disturbance, and a mild intestinal complication, manifested by tenderness and tympanitis. On the 11th, the pulse rose to 104, and he complained of the old pain in the top and back of his head; the belly was a little more blown and tender to the touch, and his appetite diminished. On the 12th, the pulse was 96; there was less tympanitis and less headache, but still some general nervous disturbance.

My last notes in this case were taken on the 13th of June, when all these symptoms were abated—his pulse 90, appetite good, and

no pain remaining. He was discharged from the Hospital a few days afterward, well.

This was a fair specimen of a moderate case of the fever in England, uncomplicated (with the very slight exceptions noted above), occurring in a good constitution, running its course evenly, with no marked symptoms, but inclining to adynamia, tending to convalescence and recovery by the unaided efforts of Nature, but evidently benefited and sustained by the judicious use of stimulants, a light and generous diet and good nursing. It offers no peculiarities and needs no comment.

Case II.—A man, aged 40, living under unfavorable hygienic conditions — more or less exposed to the fever, experienced rigors—heat—pain in the back and limbs—nausea and thirst; followed by moderate prostration—mental confusion—slight subsultus—suffused eyes—coated and dry tongue—a faintly-marked, abundant, reddish rash, appearing on the fifth day—hot and dry skin—no chest symptoms—abdomen natural—pulse, 64 to 128—subsidence of symptoms on or about the twelfth day—convalescence synchronous with disappearance of spots on the 14th—no severe symptoms—no complications or sequelæ—rapid recovery. In detail, as follows:—

Michael Doolan, a strong laboring man, 40 years of age, was admitted to the London Fever Hospital, in charge of Dr. Southwood Smith, on the 1st day of June, 1853, having been ill six days.

Previous History and Circumstances.—This patient has lived the past twelve months in Ham Yard Court, Great Windmill St., a place by no means accessible to light and air. He is one of a family of three persons occupying the same room. There are four other families in the house, which is not large. Two persons in this house are now ill with the fever. Several others in the same yard have recently been down with the disease.

Present Attack.—He stated, when admitted, that in the night of Thursday, 26th May, he had pain in the head, joints, limbs and back, with alternate fits of heat and cold and much shivering. Next morning he went out to his work, as usual, but returned in the middle of the day with increased suffering. There was much aggravation of all the previous symptoms, with intense heat of surface, nausea, and urgent thirst. He got a dose of senna and salts; his bowels had previously been costive. On Monday following, the rash was observed faint, of a reddish hue, pretty generally dif-

fused over the arms, chest and legs. He was brought to the Hospital on Wednesday, 1st June. At this time (says the Hospital register) he had no headache, but only a sense of heaviness; mind confused, general powers good. He had great thirst, anorexia, a slightly furred tongue; a pulse of 120, of good power and volume; dry and hot skin; well-marked rash. Four stools, from oil, since admission.

June 3d.—He came under my inspection. Mind still confused; thinks he has been in the Hospital a week. Slept ill, starting and moaning during the night; "feels heavy," but complains of no headache; general powers good, yet unable to leave his bed. He has anorexia and much thirst. His tongue is slightly coated, dry and fissured. Some cough; breathing regular; abdomen natural; bowels free; pulse 120, compressible, of good power; skin hot and dry, abundantly covered with a light rash, of pinkish hue. Mist. acetat. ammon.; Vin. alb., ʒ iv.

4th.—Slept pretty well, but rambled and moaned at night. There is slight subsultus about the muscles of the face; eyes suffused; tongue thinly coated (not furred), dry and hard, red and clean at edges. Respiration 38, regular. Abdomen natural, no pain or tenderness on pressure; two stools, natural; pulse 128, rather full, a little hard, regular; skin dry and hot; pungent odor of surface; some appetite; much thirst; spots darker in hue, but not livid, more persistent on pressure, some few inclined to be petechial. To have the strong fever-mixture of the hospital, *i. e.*, ammoniæ sesquicarb. gr. v.; mist. camphoræ, ʒ iss. M. ʒ i. quâque 4tâ horâ. Also, beef-tea, Oi. per day. Sherry wine, ʒ iv.; gruel, milk and water *ad libitum*.

6th.—My notes show no change of consequence yesterday, except a fainter manifestation of the rash. To-day, complains of no pain; still some moaning at night; face expressive of apathy; eyes less suffused; tongue still dry and cracked, very red (color of raw beef), at edges and tip. Resonance of chest good; some little cough and natural expectoration; respiration 28, easy and free. Two stools, inclined to be watery; urine free; pulse 100, regular, of good strength and volume. Strong fever-mixture continued. Wine, ʒ viij.

7th.—Slept well; general appearance better; intelligence pretty good; eyes clearer; tongue less dry, protruded without difficulty, cleaning; slight cough, no expectoration; resonance good;

respiration 32, regular; pulse 88, strong, full; skin less hot; spots not abundant, light colored, most apparent on abdomen, where they appear imbedded in the substance of the skin. Treatment, *ut heri.*

8th.—Improved in appearance; still slightly confused on waking; talks a little at night. Tongue clean, except a strip along the middle; no chest symptoms; two natural stools; skin soft and moist; pulse 96, full and of good strength; spots vanishing.

This, it will be seen, is an example of the fever in its mildest form, wholly uncomplicated, and without anomalies. It is selected on this account, and is, in every respect, a model case of its kind. On the 9th June (the fourteenth day of the fever), convalescence was established, as will appear from the following notes, then made. Slept well and naturally, last night; face brighter; eyes clearer; tongue cleaning, slightly covered with a thin, almost white fur, edges and tip natural; skin cool and moist; spots barely noticeable, of a pinkish hue, mostly—but a few, dark and persistent, remain on abdomen; belly natural, two stools; urine free, natural; no thirst; appetite gaining; pulse 68, natural. On the 11th, the tongue was again a little dry and brown; pulse 64, full and calm. He had been indulging his appetite rather freely. On the 12th, the pulse had risen to 76, was regular and natural; the tongue moist and clean. His recovery was regular, rapid and complete.

Case III.—After exposure to the contagion of fever—preliminary symptoms, more or less severe; followed by mulberry rash—flushed face—hot, dry and dusky skin—suffused eyes; tongue at first brown, dry, cracked, swollen, then creamy—sordes—somnolence—muttering—dulness of intellect—deafness—respiration 30 to 40—slight chest symptoms—pulse 68 to 112—no noticeable complications—no sequelæ—convalescence—recovery.

John Hilton, a blacksmith, 22 years of age, was admitted into the London Fever Hospital, in charge of Dr. Southwood Smith, on the 3d June, 1853. He was brought from a "house of detention," where, it is stated, others had been ill with the fever. He is a native of London—is said to have been six or eight days ill, previously to his admission to the Hospital.

Saturday, June 4th.—When my first notes in this case were made, he had flushed face; a dry, hot and dusky skin; suffused eyes; dry, cracked and swollen tongue; sordes. He had, according to report, slept but little, and moaned and talked at night.

His intelligence is dull, mind confused—thinks he has been in the hospital a week. Respiration 40, interrupted and laborious; dry cough; abdomen flaccid; four liquid stools in bed; urine in bed; pulse 112, regular, soft, compressible; spots well diffused. He is taking the strong fever-mixture of the hospital, ʒ i. quâque horâ 4tâ; Vini, ʒ vi.

5th.—He has passed an unquiet night, dozed rather than slept; moans and talks incoherently; is dull and stupid; eyes injected; face fuliginous; tongue dry, fissured, brown almost black coat over the whole of its upper surface, extending to its edges and tip, but flanked by a creamy fur on each side, peculiar; sordes on teeth and lips; some cough, with occasional sighing; sensitiveness of surface; marked and pungent odor; spots appear to be raised, and are sensible to the finger, partly disappear on pressure. Wine, ʒ vi. Strong fever-mixture. Beef-tea, milk and water *ad libitum*.

On the 6th my memoranda are brief, and as follows: a good night; tongue still crisp and dry in centre, creamy at the sides, offering same peculiarities as yesterday; respiration 40, regular; coughs more; stools in bed; urine in bed; pulse 100, regular; spots can be felt by passing the finger lightly over the surface; senses dull; deaf. Treatment, *ut heri*. Patient is reported to have slept on the following night. Next morning (June 7th), appeared brighter; better intelligence and powers; still deaf, says he was not so before the present illness. Tongue moist, loaded with a heavy creamy coat, cleaning at tip and edges. Breathing regular, 32; less cough, expectorates easily; resonance good; abdomen natural; urine high colored, thick, sedimentous; pulse 100, regular, weak; skin cool, soft; spots fainter, pinkish in hue, disappear on pressure; surface losing its dusky hue. Treatment the same.

8th.—Has slept none; mind unsettled—he was somewhat wild in the night, and left his bed several times. Is now quiet; eyes clear; tongue is protruded with difficulty, tremulous, moist, otherwise as yesterday; no chest symptoms; abdomen natural; two stools, light and watery; urine less thick, amber-colored; skin moist; spots less noticeable, some remain on abdomen which can be felt.

9th.—Slept well, says the nurse, "and no muttering or rambling." Is sleeping also at time of visit; lies now for the first

time on his side. Suddenly waked, he is somewhat flighty, but becomes speedily conscious; deafness continues; tongue is protruded with some difficulty, moist, still covered with creamy coat, mostly confined to centre and base. Respiration 32, easy, regular; no cough; abdomen natural; two stools, out of bed; urine out of bed; rash is lighter, confined more to abdomen, and persists on pressure; skin still rather hot; thirst. No alteration of treatment.

On the 11th, this patient was convalescent, as appears by the following notes: Slept well; eyes clear; tongue clean at edges and tip, its thin and creamy lining more confined to the base; respiration easy and natural; pulse 68, natural; powers and intelligence (such as it is) good; skin is moist, cool; some appetite; no thirst; spots gone. This is a case of fairly medium severity. It is the less valuable as a record, since it was not seen at the onset of the disease, and the natural stupidity of the patient was such as to preclude all chance of any reliable history of his previous condition.

Case IV.—A woman, in previous good health—exposed to contagion of fever—vomiting—pain in head, back and limbs—rigors—heat—thirst—florid rash observed on sixth day—flushed face—suffused eyes—loaded, dry, brown, cracked, swollen tongue—sordes—pungent odor—respiration 24 to 44—moderate cough—slight tympanitis—drowsiness—stupor—mutterings—delirium—pulse 100 to 130, regular, compressible—disappearance of spots on the thirteenth day—of fever on or about sixteenth day—imperfect convalescence—obscure, but unimportant complications—recovery.

Emily B., a stout, well-formed woman, about 18 or 19 years of age, from High Holborn St., came into the wards of the London Fever Hospital, Wednesday, June 3d, in charge of Dr. Southwood Smith.

Previous History and Condition.—Is one of a family of fifteen children. Her mother was "a sickly woman," and said to be "inclined to consumption." Several of her brothers and sisters have indicated a tendency to the same disease. Represents herself to have been in sound health previous to this attack. She was born and has always lived in London. Mode of life and habits questionable. Says she has been exposed to contagion, having been several times present with a person ill of the fever.

Present Attack.—She states that on Sunday, 29th May, she was taken suddenly with vomiting, headache, pain in back, limbs,

joints, bones, &c., but kept about till the next day. On Tuesday, thinks she had less headache, but more pain in back and limbs, with rigors, heat, thirst. Her bowels had been moved by a cathartic previous to admission. On Wednesday, the day of admission, and the day following, she is reported to have had an aggravation of all these symptoms, with the exception of headache, which was but trifling. She first came under my notice on

Friday, June 5th—sixth day of fever. Patient has now no headache, but much pain in bones and limbs. No perversion of special senses; powers feeble, unable to leave the bed. She has slept ill; her face is flushed; eyes much suffused; tongue dry along the middle, inclining to crack, its edges lined with moist, white fur; light sordes on teeth and lips; chest natural; a little cough; bowels have been natural; four stools by oil; urine free; pulse 130, regular, soft, compressible; rash florid in hue, appearing over whole body, disappearing under the finger. Is taking the strong fever-mixture of the hospital, *i. e.* ammoniæ sesquicarb. gr. v., mist. camphoræ, ʒ iss.; one fluid ounce every four hours; also wine, four ounces per diem, gruel, &c.

6th.—Is reported by the nurse to have slept but little; was restless and talkative during the night; special senses good; powers weak; no headache; less pain; face flushed, dusky; tongue dry, hard, fissured, still furred on its sides; sordes on teeth and lips; breath fœtid; complains of bad taste in mouth; a little pain in throat; swallows with difficulty; respiration 40, somewhat irregular and difficult; chest, on auscultation and percussion, natural; some cough; abdomen slightly sensitive to pressure, no tympanites; one stool, natural; urine free, natural; pulse 120, regular, weak, compressible. The rash is more abundant, florid, generally diffused, disappears under the finger; skin is neither very hot nor dry, exhales a pungent, offensive odor; patient lies on her back, moans and tosses. There is considerable nervous and muscular agitation. To continue strong fever-mixture; wine, six ounces per diem; beef-tea, milk and water *ad libitum.*

7th.—Has had but little sleep during the night; moans at times; intelligence somewhat obscured; powers pretty good; decubitus easy; memory perverted, thinks she has been in the hospital two weeks. Complains of no pain; eyes much suffused, conjunctivæ injected; very bad taste in mouth; tongue is dry and hard, coat thicker along the middle, edges and tip clean; less sordes on lips;

face less flushed; respiration 44; some cough and expectoration at night; resonance good; bowels a little tympanitic; no stool; urine free, light, deposits a slight sediment; the skin is not very hot; spots fainter on arms and chest, more marked on abdomen; pulse 116, soft, compressible, regular. There is approaching stupor manifested on withdrawal of attendance and questions; some twitching of the tendons at the wrist. To continue treatment.

8th.—Patient is reported to have slept but little during the night; moaned and talked incoherently and incessantly; at times intractable. Was sensible when roused for her medicine. She is now lying on her back, breathing heavily, with marked stupor; can be readily roused, but immediately relapses into a doze. Eyelids not quite closed; cheeks have assumed a dusky hue; tongue dry, fissured, its middle hard, thick, swollen, shiny at tip; respiration 24, inclining to stertor; skin very hot, but moist, tawny; spots fading, still abundant, most apparent on abdomen; pulse 116, soft, regular, compressible. Treatment, *ut heri.*

9th.—Is reported to have been in a state of high delirium from 7 o'clock till 11, last night, since which has slept at intervals; power completely prostrated, lies as she is placed, unresistingly; is now dozing, with eyes half closed, showing a segment of the white; conjunctivæ (as much as can be seen) injected; tongue dry, thick, swollen; teeth and lips loaded with foul, black sordes; face dusky, fuliginous; respiration, which during the night is stated to have been "quick and gasping," is now easy and quiet, 32. She had taken, this morning, ol. ricini, ʒ ss., which has produced a copious evacuation. Urine free, sedimentous; spots generally diffused, but faint, do not wholly vanish under the finger, most abundant on abdomen. There is very marked stupor, patient being roused with difficulty; thirst urgent; throat very dry, she breathes only through the mouth; pulse 112, a little harder to the feel. Strong fever-mixture; wine, ʒ iv. per diem; beef-tea, milk and water *ad libitum.*

10th.—Slept the greater part of the night; talks and moans a little in sleep; intelligence better; some deafness; eyes clearer, less suffused; complains of no pain; decubitus dorsal; face clearer; tongue dry, cracked and swollen, covered with thick crust, edges and tip clean; less sordes on teeth and lips; respiration 40, regular, accompanied by some moaning; no chest symptoms; abdomen natural; three stools, scanty, passed sensibly; skin hot

and dry, exhales a pungent and peculiar odor; spots disappearing; pulse 112, regular, soft, compressible; no appetite; much thirst. To continue treatment.

11th.—Is reported to have slept well, without moaning; is more intelligent if roused, but a disposition to stupor continues; face brightening; eyes less suffused and injected; tongue protruded with difficulty, dry, black, swollen, covered with thick crust; patient appears to breathe wholly through the mouth; sordes on teeth and lips moderate; respiration 36, somewhat irregular; chest signs good; a little loose cough; abdomen natural; one stool; urine free; skin less hot, but dry; spots barely noticeable; complains of no pain; thirst urgent; pulse 104, regular, of moderate volume.

12th.—Is reported to have slept well; appears this morning brighter, more intelligent, face and eyes clearer; complains of no pain; tongue less swollen, hard and dry along the middle, red at tip and edges; a brown sordes on teeth, moderate in amount, a little on lips; chest resonant; a little cough; abdomen slightly tympanitic; one stool, dark, scanty; urine plenty, free, light colored, not wholly clear; skin moist and cool; spots disappeared, except from abdomen, where they may still be discerned; pulse 100, regular, of moderate strength and volume; there is still some inclination to stupor, patient requiring to be roused to answer questions intelligibly. Same treatment.

13th.—Patient has slept well, though a little muttering at night; eyes clearer; tongue thickly coated with brown fur, less dry, edges and tip natural; teeth and lips free from sordes; respiration 48, easy and regular; patient complains of cough; no expectoration; no noticeable chest symptoms; moans a little in breathing; abdomen natural; one stool, lighter, scanty; urine is plenty, natural; spots not noticeable; pulse 100, regular, soft, of good volume; there is no appetite; urgent thirst; intelligence unimpaired; some inclination to stupor and drowsiness. Continue treatment.

On the 15th my notes are as follows: patient now appears perfectly sensible; intelligence and general powers good; lies on either side at will; can get out of bed; tongue is cleaning, but still coated at base; teeth and lips natural; no appetite; much thirst; skin cool, moist; respiration easy, natural; cough is inconsiderable; no expectoration; one stool, watery, out of bed; urine free, high colored; pulse 100, regular, compressible. These are my last notes

in this case. The fever is now gone; the patient cannot, however, be said to be fully convalescent, some obscure, but not important complication existing, as manifested by the rapid pulse, the still coated tongue, thirst, and absence of all appetite.

Case V.—A man, without known cause; imperfect history—rigors—pains—anorexia—depression—rash on or about the fifth day—suffused eyes—dusky skin—offensive odor of surface—impeded respiration, 32 to 60—compressible pulse, 84 to 120, uniform at 120 from seventh to fourteenth day inclusive—moderate tympanites and tenderness—aggravation of symptoms on or about the tenth day—dry, brown, black, fissured, swollen tongue—sordes—ferrety eyes—pungent heat—livid and petechial spots—interrupted breathing—restlessness, stupor, subsultus, raving delirium—entire prostration—fading of rash on or about the thirteenth day; gone, except on the abdomen, on the fifteenth—convalescence—rapid recovery. In detail as follows:

John Collins, a laborer, 20 years of age, was admitted into the London Fever Hospital, under the care of Dr. Southwood Smith, on Friday, 3d June, 1853. He was born in London; is a strong, well-made man; said to be of good habits. No reliable particulars could be obtained of his previous condition. He is said to have been seized on Monday evening (30th May ult.) with the preliminary symptoms of the fever: rigors—pains—anorexia—nausea, &c. &c. June 3d, when admitted, as I learned from Dr. Sankey, the rash was beginning to make its appearance pretty extensively over the surface. He had a dusky face; hot and dry skin, with great sensitiveness; respiration irregular; abdomen natural; pulse 108, soft, full and regular.

I first saw this case on the 5th June, when the following notes were made.

General appearance of much exhaustion; much restlessness during the night, groans in his sleep. Patient lies on his back, in a stupid state. Skin is very hot, pungent to the feel, painfully sensitive, emits a strong and offensive odor. Some muscular disturbance; tongue is protruded with difficulty; respiration hurried and irregular; abdomen somewhat tender on pressure; bowels natural; urine high colored; pulse 120, very soft and compressible. To take the strong fever-mixture—wine, ʒ iv.; beef-tea; milk and water *ad libitum.*

June 6th.—Great prostration; lies mostly only his back; mind

confused; is dull and stupid; general powers weak. Nurse says he has slept pretty well. Face is flushed and dusky; eyes suffused; tongue heavily coated in centre, clean at edges and tip, tremulous, protruded with difficulty; respiration 58, sighing, irregular; coughs and expectorates dark-colored, reddish, thick sputa; resonance good, both dry and mucous râle heard anteriorly; spots dark, of mulberry hue, generally diffused over the body; skin hot and dry, emits a pungent and offensive odor; some general nervous disturbance; subsultus; abdomen natural; three stools, dark and offensive; urine free and high colored; pulse 120, full, regular, of good volume. To continue fever-mixture, with wine, beef-tea, &c., *ut heri.*

7th.—Patient said to have slept but little, and to have moaned and started in his sleep. Intelligence dull, but is conscious when roused. Complains of much general pain. Eyes are much suffused; face flushed, fuliginous; tongue protruded with difficulty, rather dry in middle, moist at tip; much fœtor of breath; sordes on teeth and lips; coughs much, but raises little; respiration 52, difficult and irregular; resonance good; pulse 120, regular, but jerking; three stools, dark, fluid; urine free, high colored. Skin very hot, dry and sensitive. Spots generally diffused, darker in hue, not raised, but imbedded in substance of skin, persistent, some of them petechial. To continue same treatment.

June 8th.—Is reported to have slept but little, and to have moaned and talked incessantly during the night. Complains of no pain; more stupor; eyes much suffused; tongue very dry, red, shining, protruded with difficulty; skin dry and very hot; pulse 120, soft, compressible; respiration 56, irregular; bowels natural; two stools, out of bed; urine out of bed; spots less marked; some are persistent under the finger, others fade, others wholly vanish on pressure. Treatment to continue.

9th.—Patient is stated to have left his bed at 7 last evening, afterward grew wild and refractory, "hallooed, raved, stormed and swore the night through." Is now confined by straps, and comparatively quiet; face is much flushed, dusky, fuliginous; eyes suffused, ferrety; cheeks hot to the touch; tongue protruded with great difficulty, is loaded with foul black coat, dry and crisp; very abundant sordes on teeth and lips; respiration 60, short, sighing, imperfect, difficult, drawn apparently from top of lungs only; no cough of consequence; chest resonant on percussion anteriorly,

except at upper part of left lung, where there is some dulness; dry râle on application of stethoscope; pulse 120, moderately full, regular; bowels tender on pressure; some tympanites; three stools, in bed, light, watery; urine plenty, in bed; surface hot (calor mordicans), dusky, covered with dark mulberry-hued spots, some livid and running together, persistent. He is taking of am. sesquicarb., gr. v.; mist. camph., ʒ iss. ("strong fever-mixture") fl. ʒ i. every four hours—sherry wine, ʒ iv. in course of the day; also, beef-tea *p. r. n.*, and the usual drink, milk and water, *ad libitum.*

I have no notes of this case on the 10th.

11th.—Patient is stated to have slept none. He lies on his back, with no power to turn; rolls his head from side to side incessantly, makes no noise or complaint; no intelligence; eyes are injected, ferrety, watchful; tongue swollen, thick, dry, black, cannot be protruded; abundant black sordes on teeth and lips; respiration 68, short, quick, at times interrupted; coughs a little, expectorates with much difficulty; belly sunken, a little sensitive to pressure; two stools, dark, tarry, offensive, in bed; pulse 120, weak, compressible; subsultus tendinum; dry, burning, pungent skin; odor from surface very marked and peculiar; rash fading, except on abdomen, where it remains abundant, livid, persistent; surface generally has a dusky, fuliginous hue. He is taking the strong fever-mixture of the house as yesterday, with beef-tea and four ounces of wine.

12th.—Raved the most of the night, but is reported to have slept four hours toward morning; expression of much stupor, approaching to coma; no intelligence; decubitus dorsal, with no power to turn or move; eyes closed; tongue dry, cracked, swollen, cannot be protruded; teeth and lips loaded with sordes; his hands are tremulous, and there is much nervous disturbance; breathing 60, interrupted, noisy, laborious, accompanied by moaning; 2 stools, dark, offensive, in bed; abdomen sensitive to pressure; water very plenty, in bed; pulse 120, of moderate strength and volume; skin hot, dry, harsh, communicates a burning sensation to the hand; surface has a dusky, tawny hue; spots disappeared, except from abdomen, where they remain imbedded in the skin. Has had three ounces of gin since yesterday.

13th.—Slept but little; muttering and picking the bed-clothes at night; hands tremulous; he is constantly working them toge-

ther and grasping the air; decubitus on back; great weakness, unable to turn or move; intelligence very dull, but understands a little when roused; face fuliginous, apathetic; eyes closed, some strabismus; tongue covered with dirty, thick coat, less dry; teeth and lips loaded with foul sordes; breathing 56, irregular, with moaning, easier than yesterday; belly natural to appearance, a little tender to the touch; stools dark, offensive, frequent, passed in bed; urine abundant, in bed; pulse 108, of moderate strength and volume; subsultus at wrist; skin cool; spots gone; is taking the strong fever-mixture, wine four ounces four times a day, in addition to three ounces of gin in the day.

14th.—Is reported to have slept better, but to have moaned and muttered at times. This morning at 8 sat up for a moment, but immediately fell back; intelligence is good when roused, recognized the nurse; expressed himself as feeling better. Is now lying on his side, and seems in a natural sleep. General expression better; respiration 48, more regular, easy, still accompanied with occasional groans, is impeded by presence of mucus in the bronchi, which he has not the power to throw off; abdomen natural; three stools, liquid, abundant; urine free; tongue cleaning in spots; pulse 112, soft, compressible, of moderate volume; skin soft, cool, natural.

15th.—Slept well and continuously for most of the night; general aspect much improved; intelligence good; powers stronger; lies on his side; eyes clearer; face less flushed; tongue has still a dry, brown coat along its centre, edges and tip natural; but little cough; expectorates with ease; respiration 32, easy, natural; pulse 84, regular, of good volume, compressible; still some thirst; appetite returning; skin cool, natural; abdomen natural, free from tenderness; three stools, dark, liquid, out of bed; urine free, out of bed.

No further notes were made of this case. It is an example of the fever in its severe form—showing great prostration of the vital powers, in which the flagging energies were manifestly sustained by stimulants, and nourishing diet and drinks, sometimes in the face of symptoms indicating, under ordinary circumstances, a course to the contrary. It was mostly uncomplicated. The bowels, however, were moderately affected, as evidenced by the tenderness and tympanites; and at times the brain and respiratory tract seemed to bear the brunt of the disease.

Case VI.—Without previous history or known cause; loss of

appetite—depression—dulness of intellect and senses—deafness —furred, swollen, not uniformly dry tongue—no sordes—suffused eyes—dusky skin—thirst—abundant mulberry rash—slight cough—somnolence—surface moderately hot and dry, sensitive—respiration irregular, laborious, imperfect, accompanied with moaning, 36 to 44—mucous râle—dulness on percussion at base of left lung—slight tympanitis—nervous and muscular agitation—tremulousness, subsultus at wrists—picking at bed-clothes—extreme prostration—involuntary stools and urine—muttering, raving delirium—dark, livid, petechial spots—pulse 96 to 140, moderately full, soft, compressible—disappearance of rash—convalescence and recovery.

Bridget Fitchgerald, 35 years of age, was admitted into the London Fever Hospital on the 30th May, 1853. She was brought from the work-house in the Strand, in a state of much prostration. Her previous history could not be learned. This patient first came under my notice on Friday, 3d of June. The record of her case previous to this time is gathered from the Hospital Register, and is as follows: May 30th (day of admission), there was dulness of intellect and of the special senses. General powers were feeble; patient unable to turn in bed; answers questions with hesitancy and effort; tongue is furred and dry; no appetite, much thirst; some cough; pulse 134; body covered with abundant mulberry rash. To have the strong fever-mixture (mist. carb. ammon.), wine and beef-tea. On the 2d, she is reported to have slept a good deal; general expression heavy, features dull and relaxed; patient complains of feeling cold; skin dusky; tongue dry; one stool; pulse 134; rash darker, persistent. To have four ounces gin.

June 3d.—Patient has slept during the night. There is now much pain in the head and limbs; dusky hue of face; suffused eyes; tongue is swollen, dry and crusted along its centre, furred at the edges, red at tip. There is some cough; no appetite; urgent thirst; no stool; urine scanty, passed unconsciously; rash generally diffused, of mulberry hue, fades, but does not disappear, under the finger; the pulse is 128, weak, compressible; there is great prostration; decubitus dorsal. Vin. albi, ʒx.; strong fever-mixture.

4th.—Passed an unquiet night; general expression of prostration; can be roused with great difficulty, and then understands questions partially; moans constantly; eyes much suffused; face

dusky; tongue loaded with white fur; respiration 48, irregular, laborious; chest resonant; abdomen natural; pulse 140; a little subsultus at wrist; skin not very hot; spots abundant, dark, persistent, tending to petechial; decubitus dorsal, slips down in bed. Strong fever-mixture—wine—gin—beef-tea—milk and water, *ad libitum.*

5th.—General aspect is that of extreme depression; decubitus dorsal, slips in bed; picks and pulls at the bed-clothes; moans and talks incessantly; intelligence obscured; face dusky; eyes much suffused; conjunctivæ injected; tongue dry, loaded with a brownish-white coat; no sordes; some cough; stools and urine in bed; pulse 140, soft, compressible; increased subsultus; surface of body fuliginous; spots dark, persistent, petechial. To have anodyne draught (tinct. hyoscyam., ʒ i.) *hora somni;* strong fever-mixture; wine *ut heri.*

6th.—Has slept but little; decubitus dorsal; prostration complete; delirium at night; constant and universal tremulousness; subsultus at wrists, picks at the bed-clothes; face flushed, dusky; eyes greatly suffused; tongue protruded with difficulty, furred, (not loaded); much cough; difficult expectoration; a frothy mucus collects around the mouth; universal mucous râle; the dulness on percussion is inconsiderable; respiration 36, laborious; stools and urine in bed, passed unconsciously; some sensitiveness of abdomen to pressure; pulse 120, irregular, very soft and compressible; spots dark, persistent. To have gin, four fluid ounces—wine, six ounces — strong fever-mixture — anodyne draught — beef-tea —milk and water, at first cold, then warm, *p.r. n.*

7th.—Is reported to have slept but little if any, and to have talked incoherently and raved all night. There is extreme prostration; great nervous agitation; constant tremor; face dusky, fuliginous; eyes are less suffused; tongue protruded irregularly and with much difficulty, overspread with a thin white fur, moist; no sordes; coughs and expectorates an abundant white frothy mucus. Respiration very irregular; a little tympanitis; one stool, in bed; urine in bed. General sensitiveness of surface; odor of body peculiar, very perceptible; pulse 120, irregular, soft, moderately full. Treatment of yesterday to be continued and pushed vigorously.

9th.—Is said to have slept much better, without rambling or muttering; no delirium during the night; decubitus dorsal. Pa-

tient has this morning for the first time manifested some intelligence, asked to get out of bed to be placed on the close stool; eyes are clearer; face less flushed; tongue has white thick coat extending along its centre, shading to brown, is protruded with much less difficulty. Resp. 44, more easy, accompanied with occasional cough; some expectoration, easy; diminished mucous râle; tympanites inconsiderable; two stools, is conscious of them; urine plentiful, highly charged with sediment; skin lighter in hue, neither dry nor hot; spots much less evident than yesterday, lighter; decubitus is still dorsal; some nervous agitation, twitching of tendons; slight deafness; moans occasionally; no pain; complains of great weakness only. Has some relish for beef-tea. To continue same treatment. On the 10th the general appearance of the patient was better—eyes clear; tongue moist, covered with a yellowish-brown coat, increasing posteriorly, edges and tip red. Resp. 38, easy, accompanied with some moaning; cough loose, expectorates easily; pulse 104, regular, weak, compressible; a little tremulousness at wrists; no pain; less thirst; some appetite; spots fading, almost gone.

11th.—Is reported to have slept well; complains of weakness and exhaustion; intelligence good; has some appetite, bears nourishing diet well; face still flushed and wears an expression of suffering—says she has no pain. Tongue moist—with a yellowish white fur upon base and along its centre, clean and natural on sides and at edges and tip; respiration 36, drawn apparently from top of lungs—accompanied with some moaning; mucous râle anteriorly; much dulness on percussion at base of left lung posteriorly; two stools, natural; urine free, dark colored, out of bed. Skin cool and moist; spots still apparent by inspection on abdomen, evident also on back; pulse 108, weak, soft, compressible. Emp. ves. to base of left lung posteriorly—wine and the strong fever-mixture—sago and eggs. On the 12th there was a noticeable improvement in the signs and symptoms; eyes clear; tongue clean, except a light fur at base; complains of weakness and pain in chest; respiration still accompanied with slight moaning; less dulness at base of left lung; breathes deeper, easier; no stool; urine free, lighter in color; spots discernible only on abdomen; pulse 100, regular. On the 13th, the mucous râle was inconsiderable; no noticeable dulness on percussion; skin moist and cool; pulse 100, regular, of better volume and strength;

tongue cleaning; appetite improving. On the 16th, the pulse was 96, regular, of good volume; only occasional cough; no pain; good appetite. Convalescence seems fully established.

This case offers a good example of the disease in its severe form, without complications, except the trifling tympanitis for a day or two, and the inconsiderable but annoying chest affection, as manifested by the physical signs, most marked on the 11th June. It showed well the depressing type of the disease, as commonly found—and the nature of the treatment adopted in such cases, the efficacy of which, in the instances just cited, cannot be questioned.

The following exhibits a case of the fever resulting in death, to which is appended a minute account of the appearances disclosed on *post-mortem* examination.

Case VII.—Of a man, aged 38, without known cause, living under unfavorable hygienic circumstances—sudden accession of headache—pain in back, limbs and joints—rigors—vomiting—suffused and injected eyes—flushed face—mulberry rash on the fifth day—heavily loaded tongue, at first moist, then dry, finally black—slight cough—sudden prostration of strength—somnolence—great nervous agitation—subsultus—delirium—death on the fourteenth day. *Post mortem*, general sizy fluid and dissolved state of the blood—slightly increased vascularity of the brain and its membranes—engorgement of posterior and depending portions of the lungs—punctiform injection along the great curvature of the stomach—discoloration and slight congestion of mucous membrane of small intestine, at lower portions—a few points of injection in the lining membrane of the urinary bladder—other organs normal.

James Hensaman, a laborer, aged 38, was admitted into the London Fever Hospital on the 28th May, 1853, in charge of Dr. Southwood Smith. Hensaman is an Irishman—is a resident of "Swan Yard," in Islington, a place inhabited mostly by an Irish population of the lowest grade. It is a locality fruitful in the fever, and has furnished a large number of patients to this hospital. The first notes of this case have been copied from the hospital daily records, and are as follows: Patient was ailing a little on Wednesday, 25th May, when he experienced the preliminary symptoms of fever, but not in marked degree. On Friday following (27th), the symptoms became aggravated, and the onset of the disease fairly fixed. He had headache, pain in back, limbs and

joints, alternations of heat and cold, with "tremblings"; does not remember that he had marked chills. The attack can be traced to no definite cause. Saturday, on admission, there was vomiting and increase of the preceding symptoms. 29th, complains of pain in all his limbs and joints. Slept ill, mind and special senses normal; eyes suffused and injected; face flushed, of dusky hue; tongue moist and furred; slight amount of cough; four stools; typhus rash appearing; pulse 108; powers good. Some appetite; slight thirst. Mist. carb. am. Beer, Oi. 30th, he is said to have slept well; expresses himself as feeling better, powers improved; tongue moist; some cough; two stools. He has some appetite, considerable thirst. Pulse 116. To continue the treatment. On the 31st, his pulse was 98. He had slept well; no headache; tongue moist and furred; skin moist; two stools. Muscular powers are unsteady. The record on the 2d June is as follows: Pulse 120; he is represented to have had delirium during the night, became violent and frequently left his bed, raved and talked incoherently. This morning is quiet; tongue more furred; rash copious; two stools, in bed. To have gin, ʒ iij.; in other respects treatment as before.

The following day (June 3d), the patient came under my notice. My memoranda are as follows:

June 3d.—Is reported to have slept ill; moaned and talked incoherently during the night; decumbency dorsal; much prostration, unable to turn in bed; surface moist; urine and stools in bed; spots fading; great muscular agitation. His head to be shaved, and a blister applied to back of the neck. Vin. alb. ʒ iv.; in other respects treatment as yesterday.

June 5th.—He has slept better, but moaned and talked at night; powers diminished; much tremor of the hands; tongue dry and black; three stools. Wine to be increased to ʒ viij.

6th.—Is said to have slept none, but to have rambled and raved throughout the night; there is now constant rolling of the head from side to side, twitching of the muscles, and a busy working of the hands, like a patient in delirium tremens. Decumbency dorsal; two stools; tympanites; sloughing of the sacrum; unconscious dribbling of the urine; bladder not distended. From this time the patient sank rapidly, and died at 8, A.M., on the 7th.

Autopsy, June 8th, at 11, A.M., twenty-seven hours after death. Weather fair; temperature of the room 65° Fahrenheit. Body

well developed and muscular. Height 5 feet 10 inches; length of trunk 23 inches; circumference of head 22 inches; occipito-frontal distance $12\frac{7}{8}$ inches; ear to ear $12\frac{5}{8}$ inches; acromion to acromion 15 inches; crista to crista $12\frac{1}{4}$ inches. Rigor mortis well marked in inferior extremities, left elbow and wrists; less so in shoulders, right elbow and neck. Slight greenish discoloration on abdomen, bluish on inside of the thighs, extensively blue and purplish on posterior surface of body, except where pressed upon in lying. Irregular brownish spots (size of a pea) are scattered about on the sides and back; there are others, say one sixteenth of an inch in diameter, being the *typhus spots* observed during life. These are not effaced, or at all affected by pressure, but appear to be imbedded in the substance of the skin: they are, in fact, extravasations. On the left nates is a superficial slough two inches by three in diameter. Old ulcer on right leg. Numerous minute purplish spots, from size of pin's point to one twelfth of an inch in diameter, are diffused over the surface. Eyeballs somewhat collapsed; pupils contracted; chest resonant; abdomen tympanitic. Inguinal glands on right side enlarged. Abdominal parietes free from fat; omentum extends three fourths from diaphragm to pubis. Edge of liver is just seen at epigastrium. Muscles of chest and abdomen firm and of good color. No decided emaciation. Lungs not collapsed, meeting on the median line at upper part of chest. Three inches by two of the heart is seen *in situ*.

Head.—Dura mater normal. Arachnoid of milky hue; surface moist, dotted with whitish opaque spots; veins purplish, distinct, not particularly engorged; bloody points distinct on section, exuding a black blood. Substance firm, layers of the grey and white matter indistinct on the edge. Ventricles contain a drachm of turbid serum. Central parts normal. Choroid plexus rather pale. Commissura mollis absent. Appearance of membranes at base healthy; but small amount of serum; the membranes generally strip easy. Cerebellum normal. Weight of cerebrum $2\frac{1}{2}$ pounds; cerebellum, $6\frac{1}{4}$ ounces. Specific gravity of grey matter, 32; of white, 41.*

Neck.—Contents of the neck normal.

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* This note (of the specific gravity of the white and grey matter) is suggested by the recent investigations of Dr. Sankey *On the Specific Gravity of the Brain.* See his able and original paper on this subject in the *British and Foreign Medico-Chirurgical Review* for January, 1853.

THORAX.—*Lungs.* The left is a little adherent to the pleura at the base; some adhesions also between the lobes. Externally—the color anteriorly is pale, less so and bluish near the base, growing darker by insensible degrees posteriorly; the pleura is otherwise healthy. On incision it is pale anteriorly, growing dark towards middle, and still darker posteriorly. Its substance crepitates anteriorly, becomes dense in the middle, and yet more dense posteriorly; being scraped with the scalpel a frothy blood escapes —breaks down under pressure posteriorly. Small portions of the anterior float, of the posterior sink, but only after pressure. Anteriorly the internal bronchial membrane light, posteriorly dark and stained. The larger bronchi are pale and normal, no decided injection; no tubercles. Weight one pound eleven and a half ounces. Right lung.—Slightly adherent, but adhesions are readily broken; no adhesions between lobes; slightly puckered at apex. Its aspect anteriorly is light; apex and inferior parts inclining to purple, growing gradually darker posteriorly. On incision an abundant frothy fluid escapes. Crepitation perfect throughout middle portions, less at apex; very imperfect at base and posterior portions, which are dense and spleen-like in texture, and sink readily, quickly, and without pressure. Bronchia of the middle lobe light throughout; of the interior and posterior portions, dark and stained. No marked injection. Weight, one pound eleven and one half ounces. Pleura costalis on the right side has a slight layer of lymph, which can be readily scraped off; slight roughness of the pleura pulmonalis at base. *Heart.*—Pericardium yellowish; one or two transparent spots on its surface. The blood which escapes from the large vessels dark, dissolved, sizy. Right auricle contains an abundant dark grumous clot, extending through into the ventricle. Right ventricle contains a yellowish fatty fibrinous clot, moulded to the valves and extending into the pulmonary artery. Left ventricle has a small, mostly fibrinous clot entangled in the meshes of its valves. Pulmonary valves readily hold water; aortic do not, being thickened, opaque, much contracted at upper edges; remaining valves normal. Weight of heart, fourteen and one half ounces. Substance of left ventricle three fourths of an inch in thickness. Coronary arteries normal.

ABDOMEN.—*Liver.* Slight old adhesions on right side. Externally pale, anterior edge is stained of greenish hue. Substance

firm, cuts crisply; specific gravity 67. Weight five pounds. Dimensions 11½, 8, and 2¾ inches. Gall-bladder moderately distended with bile. *Spleen*—externally normal; its substance soft, not diffluent. Dimensions 8, 4½ and 1 inch. *Kidneys*—substance of right, normal. Capsule normal. Weight 7½ ounces. Dimensions 5⅝, 3 and 1¼ inches. Capsule of left slightly adherent; substance normal. Weight 8½ ounces; dimensions 5⅝, 3¼ and 1¼ inches. *Stomach*—contains half a pint of yellowish opaque fluid; its mucous membrane slightly mammillated; some punctiform injections on its large curvature; lower portions discolored, greenish in hue; yield strips of half an inch. *Small intestine.*—Duodenum and jejunum œdematous in spots. Valvulæ conniventes distinct; about two feet from ileo-cœcal junction the large vessels can be seen through the wall, of a deep red color; at five feet the coats are generally of a greenish hue, somewhat injected and œdematous in spots; at seven feet is a discoloration of a greenish hue for a space of four inches; at lower portion the patches of Peyer appear to be slightly depressed, but their mucous membrane is entire. "Shaven beard" appearance of patch nearest to ileo-cœcal valve is barely noticeable. No ulcerations. *Large Intestine.*—Exterior normal, slightly œdematous and reddened internally. Bladder contracted; contains a little urine; is slightly injected in spots.

The preceding is a fair example of a fatal case of the fever, occurring in a strong and muscular man in the prime of life. The disease was not unusually severe in its access, nor was it accompanied by complication or any extraordinary symptoms. Its distinguishing marks, if any, were those of depression and extreme prostration. On *post-mortem* inspection, no one part appeared to have been essentially affected. The fluid, dark, disorganized character of the blood is what most arrests the attention. The morbific influence seemed to have expended itself pretty equally upon every organ in the body.

Having thus, with more or less minuteness, illustrated by examples the ordinary phases of typhus in the British metropolis, in its mild, moderate, severe and fatal forms, the broad and general statement of these facts may be laid down as follows, viz.:

It is an affection sudden and severe in its accession, originating mostly in the densely populated and poverty-stricken portions of the larger cities and towns of England, Scotland and Ireland,

traceable, in a majority of cases, on the part of the patient, to a more or less immediate intercourse with the sick; common to all ages and both sexes; ushered in by lassitude, depression, rigors, anorexia, headache, pains in back, limbs and joints; accompanied, or soon followed, by loss of strength; dulness of the intellect and special senses; perversion of memory; stupor; hot and pungent skin, dusky, moist or dry; flushed face; suffused eyes; furred and loaded tongue; accelerated, but moderately full, soft, compressible pulse; without any considerable deviation (in its simple uncomplicated form) from a normal condition of the chest and abdomen; general sensitiveness of surface; a strong, peculiar nauseous odor of the body; exhibiting, on or about the fifth day, an abundant, characteristic rash, first seen upon the arms, upper part of chest and legs, later on abdomen and back, never on the face—the approach of which is previously heralded by an indistinct mottled and roseate appearance of the surface, seemingly subcuticular—which rash is at first light, pinkish, florid, isolated or clustered, simulating not infrequently the eruption of measles—then darker, more or less persistent, spreading, increasing in abundance and intensity for several days, sometimes livid, petechial, fading on or about the tenth day, and disappearing, in the order in which it came, from about the twelfth to the sixteenth day: which symptoms may vary in severity and relative importance, may vacillate from better to worse, from worse to better, or remain stationary, or diminish in intensity till they are merged in convalescence; or may be aggravated and receive accessions—the tongue become dry, swollen, fissured, black, with accumulations of sordes on the teeth and lips; injected eyes; fuliginous face; burning skin; livid and petechial spots; hurried, interrupted, imperfect respiration, accompanied by sighs and moans; dulness at lower posterior part of chest on percussion; an exceedingly rapid, feeble pulse; extreme muscular prostration, but with momentary exhibitions of unnatural strength; coma vigil or great nervous agitation, simulating at times the busy excitement of delirium tremens; with sometimes coolness of surface and profuse sweating; terminating, at a variable period between the tenth and twentieth day, often earlier, rarely later, in death; the *post-mortem* examination disclosing, externally, much discoloration of depending and posterior parts—internally, the absence rather of any considerable organic lesion, but commonly evincing more or less abnormal vascularity of the brain and its

membranes, its substance being firm and natural; the bloody points on its cut surface numerous, distinct and dark—with oftentimes slight increase of serum beneath the arachnoid and in the ventricles, clear or turbid; lungs externally normal—internally normal anteriorly, the posterior and depending parts more dense and engorged; lining membrane of the bronchia reddened, stained, not usually injected; heart soft, flabby—its contained blood dark, fluid, dissolved, sizy—with loose non-coherent clots in the meshes of its valves; viscera of abdomen normal, with the exception of discoloration and sometimes simple congestion of the mucous lining of the small intestines—occasional softening of the spleen, and general fluid, sizy, disorganized condition of the blood throughout the body—the sum and substance of which symptoms, facts and circumstances is represented under the conventional term of *Typhus*.

Let us now consider briefly the origin, nature and essential characteristics of the typhus fever of Great Britain, as set forth in the cases adduced, and confirmed by the multitude of recorded observations now spread upon the pages of fever throughout the realm.

In London, as elsewhere, this is peculiarly the disease of poverty, deprivation and misery. Its origin is in the close, contracted, sunless quarters of the metropolis; its subjects the houseless poor and the ill-befriended emigrant. Its chosen *habitat* is in parish infirmaries and workhouses—in districts crowded with masses of human beings, comfortless, destitute and stifled in bad air; and in these abodes of want and wretchedness, amid filth and garbage, ill-drained, precluded from light and reeking with dampness and noisome effluvia, the fever, if not engendered, flourishes and spreads rapidly. It is from the precincts of Holborn and Bermondsey and Bloomsbury—from Lambeth and St. Margaret's—the parishes of St. Giles and St. George's, from Gray's Inn Lane, and the courts and alleys of Old Drury, that the wards of the London Fever Hospital are filled.

Instances are abundantly on record, also, where the fever has prevailed extensively in individual localities and particular buildings. The Ragged School Asylum and Dormitory in Field Lane, Holborn, is a case in point. This, though intended as a generous charity, became, from its ill-drainage and sadly-deficient system of ventilation, a prolific nursery of typhus. No fewer than 130 cases

of the fever were sent to the hospital, from this establishment alone, during the prevalence of a local epidemic in 1852. The Superintendent of the institution and several attendants died of the disease. In a previous year, some 130 patients were received into the London Fever Hospital from a single other establishment, viz., the Marlborough House, Peckham, the Union workhouse of the city.*

The common lodging houses, which abound in the infected districts, where a multitude of families are crowded together under the same roof—three or four households being, not infrequently, allotted to a single room, are perfect nests and nurseries of fever.†

In company with the chief of the detective police, I visited one of the most noted of these fever localities in London. A sketch from nature may not be inappropriate in this connection, and will serve to impress the facts above stated. The visit was made at night. A drive of a mile or two from Charing-cross took us into an ill-lighted, irregular-shaped court, in the midst of a densely populated portion of the city. The place was badly paved; the ground was uneven, and the whole region redolent of filth. From this court, as from a centre, crooked and narrow streets straggled out into the darkness. Down one of these we plunged, taking the middle of the way, which was also the gutter. Coming abruptly to what appeared to be the end of a *cul de sac*, we descended some steps and stooped beneath the archway of a portal. This was the entrance to one of the poorest of the cheap lodging houses of London—the temporary shelter of the most wretched and destitute wanderer, where, for a penny ha'penny a head, a bed and a

* It would appear, from the patients' own account of this establishment, that it is the most easily accessible asylum for the destitute in or near the metropolis; it is, therefore, filled to excess every night; but, on particular occasions, as at the termination of the harvest and hopping seasons, commonly fifty, and sometimes, it is stated, a hundred, men are crowded into a room 33 feet 9 inches long by 20 feet wide, and 7 feet pitch in the centre—the roof sloping from the middle to the side, at which part the ceiling is described as being not more than two feet high. It is under this shallow portion that the men's heads are placed. The room is closed at night. There are only two small apertures for windows, about 18 inches square, so that the whole of this dormitory does not afford a larger bulk of air for respiration than is appropriated, in the wards of the Hospital, to three patients.—*London Fever Hospital Report*, 1846.

† By far the largest number of patients, the past year, have been received from the Holborn district. No fewer than 211 have come from the courts and alleys on the eastern side of Gray's Inn Lane; such as Tyndall's buildings, Pheasants court, &c. In the whole of this locality, over crowding has been carried to such an excess that commonly three or four families occupy a single room, into which it is no unusual thing for twenty persons to be huddled together.—*Lond. Fev. Hosp. Rep.*, 1852.

roof is furnished for the night. The detective knocked authoritatively at a side door, which, in a few moments, was unbolted and thrown open. A most villainous stench was our greeting. The floor of this room was several feet lower than the level of the street, so that drainage was out of the question. We entered without ceremony, and saw, by the light of a lamp suspended from the ceiling, the limits of an irregularly square room, some fifteen by sixteen feet measurement on the floor, by scarcely six feet in height. The inmates, twenty-two in number, were sleeping when we entered. One or two of them started up—gazed vacantly at us for a moment, and immediately sunk back drunk with sleep and the narcotism of the foul air. They lay in groups, in all attitudes, in beds and upon the floor—men, women and children promiscuously. I observed four men in one bed, muscular and brawny subjects, having only a single sheet, which served, the time being, both shirt and covering for them all. Upon a mattrass hard by, lay two men and one woman, in a similar state of *deshabille*. Then came half a dozen boys, closely packed in a row upon the floor. Young girls and little children, with tattered and scanty garments, occupied every inch of space that was left. All were slumbering heavily. On lines of ropes, crossing and re-crossing each other and attached to hooks in the walls, were suspended the ragged, still crawling garments of the sleepers. It was not a place for long tarrying. The atmosphere of the room seemed, in the hot night, the very condensation of pestilential foulness. In the few moments of our stay it made an impression, not on the senses only, but upon the brain, the effect of which was perceptible the next morning in an intense headache and vertigo, which lasted for most of the day. How beasts, much more human beings, can endure a night of it, is a mystery. I have visited the crowded between-decks of an emigrant ship, on its arrival after a long voyage, and only there have found a parallel. Can we wonder that disease, in its most aggravated form, comes forth from such dens as these? Philanthropy and sanitary laws, it is true, have done much in England of late years to mitigate these evils; but much, very much, remains to be accomplished.*

* "I went to the house of some children," says Dr. Jenner, "in a court leading out of Gt. Gower St. It was a wretched abode. The house was dark, filthy and offensive. The people begged me to speak to 'somebody,' that its condition might be seen into; that the landlord might be compelled to whitewash the dingy walls, and cleanse the offensive sewers. I found that death

Thus much as to the origin and chosen *locale* of the disease. Once engendered, under such circumstances, it is eminently infectious and contagious. If proof of this were wanting, after what has already been said, it may be found in the melancholy records of mortality among the physicians, medical attendants and nurses, who have come much in contact with the fever in private or in public. I was informed on high authority, in Dublin, that, in the epidemic of 1847–48, one out of fourteen of all the physicians in Ireland were victims of the disease. In the London Fever Hospital, Dr. Sankey the resident medical officer, and most of the attendants and nurses of that establishment, have, first and last, been down with the fever. In 1847, six of the official inmates were the subjects of it, two of whom died. And in 1843, when the Hospital was greatly crowded with patients, the number of the residents, attendants and others, seized with fever, was twenty-nine, being in the proportion of one inmate to 52½ patients.*

A large proportion of the cases admitted to the hospital, can be traced directly to this source. It is mentioned, in the Report for 1846, that it is certain the fever was prevailing in the houses and localities from which the patients were taken, in no less than 82 instances (out of the 477 admitted), and, it is further stated, that this was undoubtedly the case in many more than could be definitely ascertained, from the patients themselves, because some were too ill, others too unobservant to give a correct account of the circumstances connected with their attack. In 1847, also, 256 of the patients affirmed, on their admission, that fever was prevalent in the dwellings, and in the neighborhood, from which they came. Instances, too, are of common occurrence where, from a

had visited their house. The youngest child had died of brain fever with severe diarrhœa, and another child had suffered from fever, during which blood had passed in great quantity from the bowels. Surely, while England tolerates the existence of these nurseries of disease, it is a mockery—a very cant—to appoint days of national fasting and humiliation, in the hope of staying the progress of epidemic scourges. As well might the drunkard, indulging in gin daily, pray God to spare him the miseries of diseased liver and its attendant dropsy."—*Dr. Jenner on Typhus, Typhoid and Relapsing Fever.*

* See the Reports of the Hospital for those years.

In our own country, the general statement also holds true. It was strikingly exemplified in the prevalence of the fever, at Philadelphia, described by Dr. Gerhard in 1836. At the Emigrant and Marine Hospital in New York, many of the medical staff, including three incumbents of the post of Health officer, at Staten Island, in succession, have died of it. At South Boston, the Superintendent of the House of Industry, and great numbers of the assistants and nurses, fell victims to their faithfulness in duty during the epidemic of 1847–48; while, at Deer Island, out of thirty-two physicians, medical attendants and nurses, but two (of whom the writer was one) escaped the disease.

single case, the disease has extended through a family or whole household. Some striking illustrations of this fact are to be found in the Hospital Records. In 1846, a man died of fever after a few days' illness. Three of the mourners, who attended his funeral, were seized with fever and brought to the hospital, where, after a severe illness, they recovered. The wife of the man who died had been also attacked; she resolutely refused to leave her house, and died. Two other persons, residing in the same house, were next seized, and were brought to the hospital on the first or second day of their illness; after a severe struggle they were saved. In another instance, nine members of a family were seized with the fever, in its severest form, in quick succession. Four of these were received into the hospital, and five remained in their own house. Of the five who remained at home, four died; and of the four admitted to the wards, two were dismissed cured and two died.*

And yet the disease should not be held as contagious in the same sense that smallpox is contagious, i. e., that it is invariably and virulently so. Certainly the sphere of action is more limited —the communication of the poison more dependent on circumstances—and the morbific influence more within the control of sanitary laws and regulations, than in the usual zymotic or so-called contagious maladies. It may be stated as a general rule, that the contagion, to be effectual, must be concentrated by the crowding together of patients—or accumulated and aggravated in ill-ventilated and pent-up rooms—or stimulated by the conjunction of other unfavorable hygienic conditions, ill drainage,† filth, effluvia, &c. &c.—or the recipient have been previously subjected to the predisposing causes by deprivation, hardships and want, excesses, anxiety, fear, despondency, mental and physical exhaustion or debility from any cause, till his system has been brought to a point below the power of resistance.‡

It follows that immunity from the reception of contagion in the

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* These facts are also interesting in a collateral way, as showing the benefit of hospital care and treatment, in the ordinary subjects of typhus, over the attentions they receive in their own homes.

† Five persons were seized with fever immediately after the opening of a foul drain in Chapel street, St. George's in the East, three of whom were admitted into the Hospital on the same day, one on the day following, and one two days afterward.—*Lond. Fev. Hosp. Report*, 1848.

‡ I am aware there are many apparent exceptions to this rule. Instances are on record, some of which have occurred in the experience of the writer, where persons exposed to isolated cases have received the contagion; or, being subjected to a particularly aggravated phase of the fever, have been stricken down suddenly as with a blow, though previously in good health.

exposed, and from an aggravation of horrors on the part of the sick, is to be gained, as far as possible, by a strict observance of the well-known maxims of hygiene—first and foremost among which, is the possession of a stout heart and a sufficiency of the light and air of heaven.* Hence, an explanation of the fact that, in the outbreak of the fever in 1847, when sheds and shanties open to the elements were of necessity used, in Dublin and elsewhere, both patients and attendants fared the better.†

As is well known, the disease is often epidemic, prevailing extensively, as already stated, in some districts, towns and localities, while absent in others; and raging and overspreading the country in certain seasons and years. These last are heralded mostly by some wide-spread calamity, involving misery and suffering and general want. At such times, multitudes of the most destitute flock to the metropolis and the other great cities of the realm, in search of food and employment, carrying with them a predisposition to the fever—stopping for shelter in the filthiest and most wretched abodes, sowing therein the seeds of disease, and, then, speedily finding their own way into the hospitals to die. In the famine year of 1847, the fever was thus engendered and dissemi-

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* The Government of the London Fever Hospital have, with a commendable philanthropy, published and disseminated the following *Rules*, to be observed in the apartments of those who are confined by the fever:—

"I. It is of the utmost importance to the sick, and their attendants, that there be a constant admission of *fresh* air into the room, and especially about the patient's bed. The door or a window should, therefore, be kept open both day and night, care being taken to prevent the wind from blowing directly on the patient.

"II. Attention to *cleanliness* is indispensable. The linen of the patient should be often changed; and the dirty clothes, &c., immediately put into fresh cold water, and afterward well washed. The floor of the room must be cleansed every day with a mop, and all discharges from the patient immediately removed, and the utensils washed.

"III. Nurses and attendants ought to endeavor to avoid the patient's breath, and the vapor from the discharges; or, when that cannot be done, they should hold their breath for a short time. They should place themselves, if possible, on that side of the bed from which the current of air comes and carries off the infectious vapors.

"IV. Visitors must not go near to the sick, nor remain with them longer than is absolutely necessary; they should not swallow their spittle, but clear the mouth and nostrils when they leave the room.

"V. No dependence must be placed on vinegar, camphor, or other supposed preventives; which, without attention to *cleanliness* and admission of *fresh air*, are not only useless, but, by their strong smell, render it impossible to perceive when the room is filled with bad air or noxious vapors."

† This fact early commanded attention at all the points where, in this epidemic, the fever was poured upon our shores. It was eminently manifested at South Boston and at Staten Island, N. Y. And it was not till the patients were placed in the wards of the palatial, but badly-contrived and ill-ventilated hospital on Deer Island, that the ratio of mortality became marked, and a greater number of attendants and nurses, in proportion to the sick, were attacked with the fever.

nated to a frightful extent. The baleful influence extended into the following, and, conjoined with the cholera, even the next succeeding year.* This may be called the great epidemic triad of modern times. It was then that the flood overflowed its natural bounds and poured its surplus waves of fever for the first time upon the shores of the New World.

Some of the circumstances which influence the prevalence and severity of the fever have already been discussed. In different epidemics, the gravity of the disease, the complications which arise during its progress, and its sequelæ, vary. This has led to the belief, on the part of many most eminent authorities, that the form and type of the fever are modified. Sydenham says the type of fever is frequently changing, and that there is, for its treatment, no knowledge more desirable than an acquaintance with the epidemic constitution for the time being. The physicians of the London Fever Hospital say, in their report for 1851, that they have been attached to that institution sufficiently long to have witnessed several remarkable changes in the type of the fever; that anterior to the year 1830 (the first invasion of the Asiatic cholera having taken place in 1831), the cases in the hospital were, as a rule, of an inflammatory character, making bloodletting and the avoidance of stimulants absolutely indispensable. On the contrary, Dr. Jenner emphatically dissents from any such doctrine, and holds that the error arises from the existence, in certain epidemics, of other diseases (forming a preponderance of the cases) similar, in many of their symptoms, to typhus, but essentially different in nature. "I have no hesitation," he says, "from my own researches into the history of past epidemics of fever, in averring my confident belief that an explanation of the great difference observed by different historians in the progress, mortality, and lesion of fever—the difference of opinion entertained as to its communicability by observers of unquestionable honesty of purpose and soundness of judgment —the difference of opinion expressed as to the admissibility of particular modes of treatment—that an explanation, I say, of these differences is not to be sought in variations in a hypothetical epidemic constitution, but in the differences which exist in the essen-

* Drs. Tweedie and Smith are of opinion that the cholera, in 1849, was, in some measure, supplementary to typhus; the classes from which fever usually numbers its victims having been those among which the cholera principally raged and proved most fatal. It is certain that the aggregate of fever in London was less in that than in the two preceding years.

tial nature of the four diseases commonly confounded under the term 'continued fever.' "*

The general character of the disease, wherever it has fallen under my observation in Great Britain, has certainly been that of adynamia—a tendency to exhaustion of the vital forces. And when the system has been previously subjected to disease or a long continuance of debilitating causes of whatever nature, if attacked by typhus, the added depression is correspondingly grave. The conservative influence of a good physical condition is strikingly illustrated in hospital experience.† It is observed that the mortality among the domestic servants received into the wards from private families, is but little more than one half that of the usual classes of patients. The importance, too, of care and attention at an early stage of the disease, in mitigating the severity of its course, was abundantly demonstrated in my hospital observations.

So far as my experience and observation extend, *no age is exempt* from the disease. I have frequently seen it in very young children and in persons of extreme old age. But prior to the period of puberty the attacks are certainly milder and more manageable.

The *influence of sex* seems unimportant. A classification of all the patients admitted into the London Fever Hospital with "continued fever" for several years, shows a considerable preponderance of males; but this is accounted for, in the Report of that Institution, on the ground that the patients are largely derived from the poor population of the country, who, in times of epidemic and general distress, resort in great numbers to the metropolis in search of employment.‡

The *season* also would appear to exert no important bearing on

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* This touches on the question of the identity or non-identity of the affections commonly included under the term "continued fever" in Great Britain. So far as relates to typhus and typhoid, I have already distinctly stated my own belief (as the result of my observations in the epidemic in 1847–48 at Boston, and also in the winter and spring of 1852 in New York), that they are widely and essentially different in their nature—"differing (typhus) in all its essential points from the dothenenterite, which is endemic here, by as much as variola differs from scarlatina."—Vide *Boston Med. and Surg. Journal*, January and February, 1848, and *N. Y. Journal of Medicine*, 1852.

† Says Jenner, in no disease is the effect of previous habits of intemperance more clearly seen in causing *muscular tremors* than in typhus fever—a symptom of grave import so far as concerns the prognosis.

‡ For the years 1845–46–47 and 48, during the most of which time the fever was epidemic in some parts of Great Britain, the comparison is as follows:

In 1845, Males, 312; Females, 165. In 1846, Males, 273; Females, 233. In 1847, Males, 677; Females, 582. In 1848, Males, 667; Females, 594.

the prevalence of typhus. An analysis of the hospital admissions, for a period of eight consecutive years, shows a remarkable deviation from anything like uniformity in the comparative number of patients for the corresponding months. Sometimes the cold, sometimes the warm are the favorite seasons; in one year the Spring, in another the Autumn, now January and now July.

The *duration* of typhus fever may be stated to be from fourteen to twenty-one days.* Most often, according to my own observations, the fever will terminate in death or recovery at from the twelfth to the eighteenth day.† There are many exceptions to this law. Dr. Corrigan has detailed the case of a man, who, though somewhat ailing, was sufficiently well to dine out on Wednesday, but died of typhus on the following Friday. I have seen the disease prove fatal as early as the fourth or fifth day. And I have often witnessed the approach of convalescence as early as the tenth or twelfth day, counting from the time of the sudden accession of rigors, headache, pains and depression, to the disappearance of the rash and subsidence of all the symptoms; such cases were invariably mild.

The *ratio of mortality* in typhus is a difficult matter accurately to determine, so much do the statistics, chronicled under this head, depend on conditions and circumstances. I have already said the accession and course of the disease are often severe in proportion to the previous exhaustion and debility of the patient, or his long-continued subjection to the usual predisposing causes of fever. Under such circumstances, the mortality is also proportionally great.‡ Moreover, a large proportion of the fatal cases which appear on hospital records, are those of patients brought in, in the last stages of the fever, and who die within a few days after their admission. An analysis of the Reports of the London Fever Hos-

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* Dr. Jenner believes, as the result of his observations, that the disease *per se* never exceeds twenty-one days in duration; that uncomplicated typhus may terminate the life of the patient at any period before the twenty-first day; that, after the twenty-first day, local lesions sufficient to account for death, are, as a rule, discernible.

† I find, by reference to my notes taken at South Boston and Deer Island Hospitals, that, in the majority of fatal cases there, death occurred between the eleventh and seventeenth days.

‡ In proof of this, Drs. Tweedie and Smith say, in their Report for 1852:—"During the last year 70 domestic servants from private families were admitted to the wards, of whom only 4 have died, being a mortality of 5.71 per cent. On the other hand, 89 destitute persons have been received, of whom 11 have died, being a mortality of 12.13 per cent.—a significant indication of the power of robuster health in resisting an attack of fever." It should be stated, however, that these include also cases of typhoid and scarlet fevers.

pital, from 1849 to 1853 inclusive, gives the following results, to wit:—in 1849 the rate of mortality was 7.75 per cent.; in 1850, 22.41; in 1851, 22.40; in 1852, 10.16; in 1853, 11.82*—clearly showing that no reliable deductions can be made from the results of those years.† My own observations agree with the recorded experience of others, that the mortality of typhus is largely increased after the middle period of life, while before the age of puberty it is but trifling. Pregnancy is found to exert no necessarily fatal influence.

I will only allude, in conclusion, to some of the chief characteristics of the symptoms and pathology of typhus. Among these, the suddenness of the attack—the early and great prostration—the rash—the dusky hue and sensitiveness and peculiar odor of the surface—the passive engorgements—the tendency to muscular and nervous agitation and freedom from important local derangements—and, after death, the early accession and brief duration of cadaveric rigidity—speedy decomposition—general fluidity of the blood, but otherwise absence of any considerable lesions, are peculiar and essential.

In the cases I have previously detailed, and which may be regarded as models of the disease in its varying forms of severity, the accession of the fever was invariably sudden, preceded by only a day or two of trifling ailment, and accompanied uniformly by anorexia, rigors, nausea (often with vomiting), pains, hot skin, depression and headache. The depression is an early and almost constant attendant; the strength soon becomes exhausted, the mind and memory confused, and the spirits despondent. The exhaustion increases, till, in the acme of the disease, the powers are completely overwhelmed. If, now, in the excitement of delirium, some almost superhuman feats of strength are exhibited, this unnatural exaltation is followed by utter prostration and death. The headache, which is usually intense at the outset, gradually subsides, and after seven or eight days disappears.‡ The hot skin prevails till the

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* The largely-increased mortality in the years 1850 and 1851 is accounted for by the fact that an unusual number were admitted in the last stages of the disease.

† It must be stated, in this connection, that prior to 1849, no distinction was made in these reports between typhus, typhoid and relapsing fevers, they being all classed under the head "continued fever." The change effected in this respect, on the Records of the London Fever Hospital, must be regarded as, in a great measure, due to the able and convincing investigations made in that establishment by Dr. Jenner, and published in the medical journals of Edinburgh and London.

‡ According to the observations of Jenner, the headache ceases on from the seventh to the tenth day; and if not before, almost invariably as soon as delirium commences. He further

twelfth or fourteenth day, and is often excessive. It is also peculiar, dry, burning and pungent to the feel. "It utterly wants," says Corrigan, "the slightest approach to that soft feeling that is often conveyed even from skin much hotter. The sensation is like that received when the hand is laid on the side of a hot-air stove and probably arises from its quickly robbing the hand of its moisture."

On the fifth or sixth day, the characteristic rash appears. I have seen it oftenest on the fifth. Speaking on this point, says Dr. Jenner, whose clear and accurate description is better than any I can give, "the eruption at first consists of numerous, roundish, slightly elevated, dusky pink spots, effaceable on pressure by the finger, quickly resuming their color, however, when the finger is removed; on the second or third day after their appearance, these spots, instead of being effaced, merely fade, i. e., grow paler on pressure. At the same time with the spots referred to, there is present a much paler rash, which appears to be seen through the cuticle, as if the spots composing it were, as the vulgar saying is, 'not well out.' The latter is the *subcuticular rash*—the whole eruption, the *mulberry rash*. The eruption grows darker in hue, the centre of many of the spots toward the termination of the second week are unaffected by pressure, and here and there are to be seen spots with well-defined outlines quite unalterable in appearance by the firmest pressure of the fingers, i. e., true petechiæ. On the posterior surface of the trunk, the spots are much darker and less affected by pressure than on the anterior surface. Miliary vesicles or sudaminæ are sometimes observed about the end of the second week, usually in the groins, at the epigastrium, and under the clavicles. Toward the termination of the disease, if it proves fatal (from the twelfth to the twentieth day), the spots are scarcely or not at all affected by pressure, especially on the abdomen. After death, on the surface of the trunk and extremities are found the remains of the spots noted during life. If a portion of the skin is removed and examined with a lens, the persistence of the spots, which faded or grew paler on pressure, is found to be due to the staining of the surface of the

says, "this is a point of great practical importance, for if headache is voluntarily complained of by the patient, or if even declared to be severe in answer to the question of the physician, after delirium has commenced, strong suspicions, to say the least, of inflammatory action within the cranium should be entertained, and remedies adopted with that view of the case; while headache, before delirium has commenced, is in itself not the slightest proof of increased vascular action within the cranial cavity."

cutis; while the whole of that texture, and even the subcutaneous tissue, is dyed deep purple in those spots which were unaffected by pressure during life." If, instead of death, the disease terminates in recovery, the fading and disappearance of the spots is coincident with commencing convalescence. According to my own observations, the first signs of approaching spots are an indistinct and faint but peculiar mottling blush of the surface, resembling the commencing congestion of a mild case of roseola, seen often as early as the third day upon the arms, shoulders and upper parts of the chest, by attention to which the appearance of the characteristic eruption may be predicted with certainty.*

The dusky face and fuliginous hue of the body is a common accompaniment of typhus. It is noticeable early, and deepens as the disease proceeds. It varies, however, in intensity, in different habits and temperaments. Conjoined with this, and bearing an appreciable relation to its intensity, is the marked and pungent emanation from the general surface, which has been variously described as mousey, nauseous, mawkish, ammoniacal, &c.; furnishing to another sense a testimony of the peculiar and specific nature of the malady.

A muscular unsteadiness also is early apparent. There is a tremulousness of the hands and of the tongue. Later, these involuntary movements become marked. At first perceptible only in the twitching of the tendons at the wrists, they may presently involve the arms, shoulders, neck, face and trunk; the prognosis is grave in proportion to their extent and intensity. The acme of this deranged muscular action is spasm and convulsions, which are almost invariably fatal.

That there is essential nervous and cerebro-spinal derangement is manifested also by the general sensitiveness of the surface, and the excited respiratory and cerebral action. Delirium, in greater or less degree, is an almost constant concomitant. It is not infrequently accompanied by the wakefulness and excitement and busy activity of delirium tremens, which it sometimes closely resembles. In this condition the patient becomes wild and unmanageable.

* This early mottled and roseate appearance of the skin was seen and described by the writer in the epidemic of 1847–48. It was then deemed important, in a diagnostic point of view, as heralding the advent of the distinguishing eruption of typhus. It differs from the *subcuticular* rash of Jenner, and might, with justice, be termed the preliminary or *roseate rash*, forming, perhaps, with the "distinct spots" (also adopted in the nomenclature of Jenner), yet a third division of the typhus rashes.

More often, the early somnolence is attended by muttering and talking, a state which passes gradually into stupor and coma—the patient lying prostrate and utterly unconscious. The respiration is peculiarly affected. The breathing becomes quick and laborious —or is impeded and interrupted, often amounting in frequency to 50 or even 60 in a minute. And yet there is remarkable freedom from any important structural disease. The diagnostic marks of cerebral inflammation are wanting. Auscultation and percussion fail to detect any adequate abnormal signs in the chest. The abdomen is natural in appearance, and free from any considerable tenderness or tympanitis.* The stools are somewhat relaxed, but the bowels are regular and easy in their action. Neither the stomach, the liver nor the kidneys give evidence of any organic disturbance. There is a tendency to passive engorgements or congestions only. The posterior surface of the trunk is discolored—the skin congested—the spots darker, and a disposition to sloughing is there manifested. Evidence of this general congestion may also be obtained in the posterior and depending portions of the lungs by the stethoscope.

And the most careful *post-mortem* inspection will fail to discover any adequate structural changes. The body is much discolored externally—the under surface especially. The spots that existed during life remain. There is but little emaciation. The rigor mortis comes on early, and quickly disappears. Decomposition speedily ensues.† There is some congestion of the membranes of the brain, often intense, especially at its base; and the serosity beneath the arachnoid, in the ventricles and at the base, is somewhat increased. The substance of both the gray and the white matter is mostly natural in consistency—the bloody points which exude on section, darker and more numerous. The lungs, in their posterior and depending portions, are engorged; but this is mainly mechanical, dependent, like the discoloration of the under surface of the body, upon position. The lining membrane of the bronchia is stained—more rarely injected, but otherwise natural. The walls of the heart, as also the substance of the liver, pancreas, kidneys and

* In some uncomplicated cases the patient will shrink from the first slight touch of the abdomen, but will bear the subsequent pressure. This is owing, no doubt, to the general sensitiveness of the surface already alluded to, and which is often extreme. A want of consideration on this point might easily lead to a belief that the intestines were in fault.

† Hence an early examination of the body is important, that the alterations produced by disease be not confounded with those of cadaveric change.

spleen,* are flabby. The intestines are normal, except occasionally slight congestions of the mucous coat along the lower portions of the ileum. The glands are not affected. The internal lining membrane of the stomach, especially at its cardiac extremity, is frequently softened. But the blood throughout the body is fluid, disorganized, dissolved and sizy. It readily infiltrates the loose textures, and stains the membranes with which it comes in contact. The usual clots found in the heart are loose and easily broken. In the sinuses and large vessels of the brain, it is dark, thin, and non-coagulated. It is the blood alone that is evident to be essentially and vitally diseased.

Complications.—What has hitherto been said, refers to typhus in its simple unalloyed state. But complications may arise at any time during the progress of the disease, affecting very materially its aspect, its duration, termination and subsequent pathological developments. These, however, are the accidents of typhus, and are in no ways to be confounded with its essential nature. From a want of sufficient discrimination in this particular, I believe that many of the differences noted by observers during its progress, and the inconsistencies in the records of its pathology, are to be attributed. Thus if meningitis, or bronchitis, pneumonia, gastritis, or intestinal irritation and inflammation, supervene in a patient already prostrate with fever, these may, in themselves, prove a sufficient cause of fatality, and would leave their own distinctive marks at death. Especially is this a fruitful source of error in cases which are brought into the hospital in a moribund condition, and of whose previous history it is impossible to gain a rational account.

Among the affections which often supervene, are erysipelas, and inflammation and suppuration of the parotid glands. Pneumonia and gastritis are not infrequent complications. Severe and extensive sloughing of the parts pressed upon is a common and distressing concomitant. But "it would be impossible," says Corrigan, "to allude to all the complications of fever. They may include nearly all the local diseases to which the body is liable, and demand the constant and watchful attention of the physician."

Among the *sequelæ* which are common to typhus in Great Bri-

* Dr. Jenner says of this organ, "It varies somewhat in its state, according to the age of the subject; before 45 or 50, it is usually much enlarged—after that age it is still often enlarged, but not so decidedly so as in the earlier period of life. Softening appears to follow the reverse order, as it is softer in aged than in young subjects."

tain, Dr. Corrigan mentions inflammation of the lymphatics of either upper or lower extremities, which sometimes prevails epidemically, producing painful, suffused, red surfaces, and abscesses of considerable size, with corresponding high irritative fever. This affection, he continues, may be of every degree of intensity; and its effect on the constitution of the patient, worn out with the fever, is very trying. He recommends the removal of the patient, as soon as possible, to a pure country air, and a treatment of tonics and alteratives. Adhesive phlebitis is sometimes a troublesome sequela, affecting most frequently the inguinal and femoral veins. It is annoying, says Corrigan, not only in its immediate consequences, but in its after results—the leg and thigh frequently remaining enlarged for weeks after recovery, and varicose veins then succeeding and continuing for life. Its first approach should therefore be carefully watched, the patient confined at once to the horizontal position, the groin leeched, the limb elevated and treated by mercurial inunction, fomentations, bandaging, &c. Jaundice is also occasionally observed as a sequela of fever.

It does not appear that the peculiar and intractable intestinal affection (described by the writer in a series of papers published in the Boston Medical and Surgical Journal in 1848), and which proved so frequent and fatal a sequel to typhus in the epidemic at South Boston and Deer Island, has been noticed as holding the same connection with the fever in Great Britain. At any rate, if observed, it has not as yet claimed the attention which its importance as a sequela of the disease on this side of the Atlantic deservedly demands.*

It is not in accordance with my present object to more than touch, in passing, upon the pathology of the fever in question; and I have elsewhere described, with some minuteness, the *therapeutical* management adopted in the epidemic of ten years since. The preceding delineations have shown the typhus of Great Britain to

* In the Report of the London Fever Hospital for 1847, it is remarked that, "in the unusually wet weather that prevailed in the summer and autumn of the preceding year, diarrhœa occurred in almost every case, and in the aged and debilitated rapidly destroyed life; it was the principal cause of the mortality in August, the deaths in that month being as high as 1 in 3½." But these facts are only incidentally mentioned in the report, without any intimation as to whether it was regarded as a sequela of the fever.

A distinguished Dublin authority has detailed, in his published Lectures on Typhus, an instance of severe and fatal intestinal disease occurring during *convalescence*, which he has adduced as an example of typhoid fever, or dothinenteritis, supervening on typhus; but which, in the mind of the writer, from both its symptoms and pathology, is clearly a case of the *secondary intestinal affection*—the sequela of typhus above mentioned.

be identically the same with that which raged along our shores in 1847–48. Adynamia is there, as it was here, the chief element of the disease, requiring for its management the adoption of the same principles of treatment. Yet such management is the farthest possible remove from a senseless and empirical routine. And I cannot more appropriately close this imperfect sketch of typhus fever in Great Britain, than by an extract bearing on this point, from the works of the eminent observer and writer I have so often quoted in the course of these papers. Says Dr. Jenner: "In no disease is the advantage of refraining from meddling more clearly displayed than in typhus fever. In no disease is the prompt use of powerful remedies more clearly indicated than in typhus fever. It is in determining when to act, and when to do nothing, that the skill of the physician as a curer of disease, or, rather, with reference to fever as an averter of death, is shown. Interfere, bleed or stimulate, when nothing should be done, and the patient, but for you safe, is lost. Refrain from depletion, or withhold wine, when the one or the other is required, and the patient sinks into that grave from which a judicious treatment might have saved him."

The Appendix mentioned in the title-page, and intended to be inserted here, is necessarily omitted.